

REMARKS

Claims 1-3 and 5-11 are now pending in the application. Claims 1, 5 and 8 have been amended. Support for the foregoing amendments can be found throughout the specification, drawings, and claims as originally filed. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 112

Claims 1-3 and 5-11 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed.

Applicant has amended claims 1 and 8 to address this rejection. Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

REJECTION UNDER 35 U.S.C. § 102

Claims 1 and 5-7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Chapman (U.S. Pat. No. 5,974,027). This rejection is respectfully traversed.

Applicant has amended claims 1, 5 and 8 to more clearly point out the claimed subject matter.

Claim 1 recites a virtual protection method for a fiber path consisting of more than one nodes, which comprises:

- dividing each optical port of each node in the fiber path into multiple minimum protection units individually;
- defining a plurality of logic-systems in a network, wherein each of the logic system defines a physical media with a same protection mode;

mapping more than one of the minimum protection units into different logic-systems, wherein each logic-system consists of at least two minimum protection units of each node; and

determining, where protection for a logic-system is needed, a working mode of a node that belongs to the logic-system; the working mode including normal working mode, passing working mode, bridging working mode and switching working mode; wherein

in the passing working mode, the input protection bus of a node is connected to the output protection bus of the node;

in the bridging working mode, the input protection bus of a node is connected to the output working bus of the node; and

in the switching working mode, the input working bus of a node is connected to the output protection bus of the node.

Applicant respectfully submits that Chapman at least fails to anticipate the limitations of “dividing each optical port of each node in the fiber path into multiple minimum protection units individually”, “defining a plurality of logic-systems in a network, wherein each of the logic system defines a physical media with a same protection mode”, and “mapping more than one of the minimum protection units into different logic-systems to form more than one logic-system, wherein each logic-system consists of at least two minimum protection units of each node” of claim 1.

Chapman (column 1, lines 6-10) states that “[t]his invention relates to a telecommunications network including a *channel* switching protection arrangement and in particular relates to a way of identifying a *channel*, section, path or the like so that it can be switched remotely in an SDH network.” Thus, Chapman at best appears to relate to a *channel* switching protection arrangement. Chapman (column 1, lines 20-24) further states that “[a]s used within the specification the term ‘*channel*’ will be used to describe either a path or a section, the important factor being that each *channel*, path or section connecting a pair of nodes is uniquely identified by means of a trace signal”. In other words, Chapman actually relates to a path or a section switching protection

arrangement. That is, Chapman at best appears to show a path or a section switching protection arrangement method, in which each individual path or section forms one "logic-systems" and can be switched remotely. Each "logic-system" consists of only one path or section.

In contrast, claim 1 defines that each optical port of each node in the fiber path are firstly divided into multiple minimum protection units, and every more than one minimum protection unit is then mapped into different logic-systems, and each logic-system consists of at least two minimum protection units of each node. An embodiment of the claimed "minimum protection unit" can be a VC3 or a VC4. Compared with the alleged "logic-system" shown by Chapman which consists of only one path or section, the claimed logic-system consists more than one minimum protection unit.

Therefore, Applicant submits that Chapman fails to anticipate the limitation of "mapping more than one of the minimum protection units into different logic-systems to form more than one logic-system, wherein each logic-system consists of at least two minimum protection units of each node."

Further, the above discussions show that Chapman appears to relate to conventional path or section switching protection arrangement. A person skilled in the art would appreciate that since a section switching protection arrangement is a protection solution based on the physical optical port, it may not *flexibly implement appreciate protection based on different services and thus can cause waste of virtual containers (VC)*.

Further, a path switching protection arrangement is a protection method based on the carried services and can be more flexible. Where the number of services

carried in a SDH network is very large, however, because switching is made for each service channel separately, protection based on service channel can be very complicated. Thus, in order to provide a protection method with a proper protection granularity and suitable complexity, claim 1 defines the concepts of minimum protection unit and logic-systems. Wherein, a minimum protection unit is divided from an optical port of a node in a network, which can be used to define to a relatively proper protection granularity. And each of the logic-system defines a physical media with a same protection mode. In this case, where protection for a logic-system is needed, a working mode of a node that belongs to the logic-system is determined. That is, when protection is needed, a logic-system performs a protection switch as a whole. In contrast, Chapman only appears to show a path or a section switching protection arrangement. Therefore, Applicant submits that Chapman fails to anticipate the limitation of "dividing each optical port of each node in the fiber path into multiple minimum protection units individually" and "defining a plurality of logic-systems in a network, wherein each of the logic system defines a physical media with a same protection mode".

In view of the forgoing, Applicant submits that claim 1 and its dependent claims 5-7 define over the art cited by the Examiner.

REJECTION UNDER 35 U.S.C. § 103

Claims 2-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chapman (U.S. Pat. No. 5,974,027) in view of Applicant's Admitted Prior Art.

Claims 8-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chapman (U.S. Pat. No. 5,974,027) in view of Mochizuki et al. (U.S. Pat. No. 6,122,249).

These rejections are respectfully traversed.

Applicant submits that the arguments presented regarding claim 1 apply equally hereto. Applicant respectfully submits that Chapman and Mochizuki, individually or in combination, fail to teach or suggest the limitation of "mapping more than one of the minimum protection units into different logic-systems to form more than one logic-system" of claim 1. Because claims 2-4 depend from claim 1, claims 2-4 also define over the art cited by the Examiner. Thus, Applicant respectfully requests withdrawal of the rejection on claims 2-4 under 35 U.S.C. § 103(a).

Similarly, Applicant respectfully submits that Chapman and Mochizuki, individually or in combination, fail to teach or suggest "a component configured to divide each optical port of each node in the fiber path into multiple minimum protection units individually; define a plurality of logic-systems in a network, wherein each of the logic system defines a physical media with a same protection mode; and map more than one of the minimum protection units into different logic-systems to form more than one logic-system, wherein each logic-system consists of at least two minimum protection units of each node" as recited in claim 8.

In view of the foregoing, Applicant respectfully submits that independent claim 8 and its dependent claims 9-11 define over the art cited by the Examiner. Thus, Applicant respectfully requests withdrawal of the rejection on claims 2-4 and 8-11 under 35 U.S.C. § 103(a).

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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